DETAILED ACTION

1. This Office Action is in response to communications filed on 12/01/2009. Claims 1, 3-16 and 19-20 are pending. Claims 2 and 17 are cancelled.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/04/2009 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-4, 6-16 and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Desai et al. (US 2001/0051803); hereinafter Desai.

Regarding claims 1 and 13, Desai discloses a device for treating a volume of biological tissue by localized hyperthermia (e.g. see abstract, 0023), the device including a plurality of active percutaneous electrodes, at least one return electrode, and

a high frequency electricity generator suitable for applying an alternating voltage between the active electrodes and the return electrode (e.g. see paragraphs 0065, 0066, 0069, 0071), wherein the generator is suitable for feeding each active electrode independently of the others including means for adjusting the amplitude of the voltage applied to each active electrode and phase differences between the voltages applied by the electrodes, such that the parameters of the voltage applied to each active electrode can be adjusted in independent manner (e.g. see paragraphs 0031, 0071-0073, 0075), thus generating electric currents propagating between the active electrodes within the volume of biological tissue and causing necroses or ablation of the biological tissue (e.g. see abstract, paragraphs 0071-0073, 0075, Fig. 2b, Fig. 5a).

Regarding claims 3 and 18, Desai discloses wherein the generator is suitable for applying voltages to two active electrodes i and j that present respective amplitudes V.sub.i and V.sub.j with a phase difference .PHI..sub.ij that is equal to:

$$\Phi_{ij} = a\cos\left(\frac{V_i^2 + V_j^2 - \Delta^2}{2V_i \bullet V_j}\right), \Delta \in \left[\left|V_j - V_i\right| V_i + V_j\right]$$

where .DELTA. is a desired potential difference between the electrodes i and j, and V.sub.i is the amplitude of the potential difference between the i.sup.the electrode and the return electrode (e.g. see paragraphs 0073-0076). (NOTE: the claim states that the generator is "suitable" for applying voltages to two active electrodes with respective

amplitudes with the same phase difference, which Desai's generator is suitable for. The claim does not state that the equation is used in the generator).

Regarding claim 4, Desai discloses wherein the electricity generator is a multichannel or multi-phase voltage generator (e.g. see paragraphs 0066, 0067).

Regarding claims 6 and 14, Desai discloses a plurality of active electrodes disposed at equal distances from a percutaneous return electrode (e.g. see paragraph 0066, Figs. 2b and 5a).

Regarding claims 7 and 14, Desai discloses having an even number of active electrodes (e.g. see paragraph 0071 – seven electrodes, 6 active electrodes).

Regarding claims 8, 14, 15 , 19 and 20, Desai discloses six active electrodes distributed in uniform manner in a cylindrical configuration, the return electrode being disposed at the center of the cylinder (e.g. see paragraph 0071, Figs. 2b and 5a).

Regarding claims 9, 10, 19 and 20, Desai discloses wherein the generator is suitable for providing feed voltages presenting phase differences that alternate between consecutive pairs of electrodes or successive pairs of electrodes through proper adjustment of the amplitude and phase in each electrode (e.g. see paragraph 0073, 0074, 0075).

Regarding claim 11, Desai discloses an additional, external return electrode, in particular in the form of a cutaneous conductive plate or back-plate (e.g. see paragraphs 28-30, 100 and 103, Fig. 14a).

Regarding claim 12, Desai discloses means for taking local temperature measurements, and means for controlling the applied voltages as a function of the temperature measurements taken (e.g. see abstract, paragraph 0027, 0056, 0098, Fig. 12).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Desai in view of Morris et al. (US 20020120261); hereinafter Morris.

Regarding claims 5 and 16, Desai discloses all previous limitations however fails to disclose wherein the generator includes a set of manually or automatically controlled switches, the switches being suitable for adjusting the parameters of the voltage to each active electrode independently activating or deactivating feed to one or more electrodes (e.g. see paragraphs 0158, 0159, 0162, 0163).

Morris discloses a tissue surface treatment apparatus and method including an energy generator wherein the generator includes a set of manually or automatically controlled switches, the switches being suitable for adjusting the parameters of the voltage to each active electrode independently activating or deactivating feed to one or more electrodes (e.g. see paragraphs 0158, 0159, 0162, 0163).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Desai with the teachings of Morris in order to provide the predictable results of controlling conduction in certain areas of the target tissue in order to adjust tissue impedance, selective area of tissue being heated, the rate the tissue is heated and also to prevent thermal damage by having control of which area of the tissue is to be ablated.

Response to Arguments

Applicant's arguments with respect to claims 1, 3-16 and 18-20 have been considered but are moot in view of the new ground(s) of rejection necessitated by applicant's amendment.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HIBA EL-KAISSI whose telephone number is (571)270-5617. The examiner can normally be reached on Monday- Friday 8 a.m - 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Layno can be reached on (571)272-4949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George R Evanisko/
Primary Examiner, Art Unit 3762

/H. E./
Examiner, Art Unit 3762